

# SOIL STRUCTURE AND FERTILIZERS

FROM A GARDENING CORRESPONDENT

In the past two years the gardener has been presented with a bewildering choice of fertilizers and is often uncertain about the merits of the different types; he may be doubtful, for example, whether to use only organic material or a judicious combination of organic and chemical fertilizers, and whether to apply them in solid or liquid form.

This article is not concerned with the argument for or against the use of chemical fertilizers. All that need be said on that subject is that few gardeners are able to use as much organic material as they would like, and that one of the most pressing needs is to find enough humus-forming matter to keep garden soils in a healthy state.

To make the best use of fertilizers it is necessary to study the soil. The importance of soil structure, while appreciated instinctively by the skilled, old gardener, is often lost sight of in these days of high-powered salesmanship and pre-packaged fertilizers. There is no doubt that plants are much more tolerant to the extremes of soil acidity or alkalinity and to deficiencies of certain chemicals in the soil if the structure is suitable for vigorous and healthy root development. It is important that the roots of plants should receive oxygen and that carbon-dioxide can escape from the soil.

## ACTIVE ROOT GROWTH

For this reason any material that can be used to open up the soil and to permit active root growth should not be despised. Stones, for example, play a valuable part in keeping the soil structure right. Then come the whole range of organic materials—peat, bark fibre, decomposed straw, garden compost, hop manure and of course all forms of stable or farmyard manure. Granulated sewage sludge is also available and produces valuable results.

At this time of the year gardeners are more concerned with supplementary feeding for their crops, and it is here that many gardeners seek advice. The ground is now warming up sufficiently to permit the use of mulches without fear of keeping the soil temperature low and thus retarding growth. Hop manure is an excellent mulch, providing most of the items of plant diet that they require, and good results should be achieved if it is spread around the plants at the rate of three or four pounds to the square yard. At this time of year too, spring cabbages benefit from an application of a quick-acting nitrogenous fertilizer. Nitrate of soda at the rate of an ounce to about 6ft. of row, hoed in, usually has the desired results. Strawberries also respond to a dressing of a good general fertilizer in the spring.

## GARDENER'S AMBITIONS

The gardener's approach to the problem of choosing fertilizers depends a great deal upon his ambitions and also on the peculiarities of his soil. Light, quick-draining soils need more frequent applications of fertilizers than the more retentive soils because the plant foods tend to be leached out by rain more quickly. For general garden purposes, one of the balanced fertilizers containing nitrogen, phosphates and potash—the National Growmore formula evolved during the war is still a good one—will probably suffice. Nowadays granulated fertilizers can be obtained which are easier to apply than the older forms: where soil pests such as wire worm are troublesome it would be found helpful to use the general fertilizer which is sold combined with aldrin, the comparatively new and effective soil pesticide. Where the gardener wishes to be a little more ambitious and

produce crops of certain plants rather above the average, he has the choice of either purchasing his fertilizer ingredients separately and mixing them together in the proportions best suited for the particular crop, or choosing a ready-mixed fertilizer from the large range now offered in formulations specially prepared for the various crops—sweet peas, fruits, tomatoes and so on.

There are two schools of thought about the form in which a fertilizer should be applied. Some gardeners prefer to use them in the dry form and hoe them or water them into the ground; others prefer the soluble feeds, believing that they act more quickly. Certainly it is easier to apply the correct quantities of fertilizer over a given area if they are applied in solution.

Much attention is being given at the moment to leaf feeding, and fertilizers based on urea have proved very effective for lawns. Experiments made by many gardeners also indicate that this method of feeding plants other than grass may have an important future.

## WORK ON LAWNS

At this time of the year lawns respond quickly to nitrogenous fertilizers and either sulphate of ammonia can be used with several light dressings at intervals of, say, a fortnight until about two ounces to the square yard have been put on, or one of the proprietary fertilizers, usually consisting of sulphate of ammonia and sulphate of iron, can be applied according to the makers' instructions.

For connoisseurs and also for those seeking a trouble-free plant that will flower for six months in the year or more, the *Ventido-arctotis* hybrids introduced a year or two ago will be interesting. Unfortunately they cannot be reproduced from seeds, but propagation is easily effected by cuttings. Plants rooted last autumn have been flowering in the greenhouse for weeks, and will be ready for planting out as soon as the frosts are over. They then flower profusely without a break until the frosts arrive again in the autumn. They are excellent as cut flowers.



The delicate flowers of the *Ventido-arctotis* hybrids—perhaps the most exciting novelty since the war.

resembling a gerbera, in orange, red, purple, and pink shades, but they do begin to close up at about eight o'clock in the evening. Every side shoot on the bushy plants produces a flower bud, and when in full growth a couple of plants will cover a square yard and carry their flowers from ground level to a height of about 2ft.

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*The Times* (London, England), Saturday, May 05, 1956; pg. 9; Issue 53523. (1003 words)

**Category:** News

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**Gale Document Number:**CS152000165